ZTE中兴® 中兴通讯股份有限公司
ZTE CORPORATION
HeartyService

# MF28G LTE Modem
# After-sales Service Manual (Level 1) for Sweden H3G

**Version 1.0**

ZTE CORPORATION
ZTE B3-Building, Keji Road South,
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Shenzhen, P. R. China

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## Revision History

| Revision No. | Revision Date | Revision Reason |
|---|---|---|
| V1.0 | 2012–08–13 | |

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# 1 Product Summary

## 1.1 Product Overview

NOTE

**Note:**

The picture is for reference only, please make the object as standard.

## 1.2 Standard Configuration

| NO. | Name | QTY |
|---|---|---|
| 1 | Modem | 1 |
| 2 | Power Adapter | 1 |
| 3 | Ethernet Cable | 1 |
| 4 | Quick User Guide | 1 |

## 1.3 Specifications

- Frequency band: WCDMA 900/2100MHz, LTE 800/2600MHz
- Dimensions: 202mm × 160mm × 30.5mm (Length × Width × Height)
- Weight: about 550g
- Power adapter: 12V
- 4 RJ45 interfaces
- 2 RJ11 interfaces
- USB 2.0

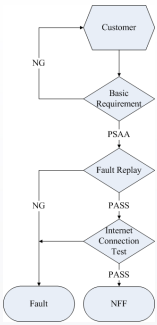
## 1.4 Main Functions

- Support high-speed wireless data.
- Support PSTN phone and VOIP phone.
- Support connecting to WAN.

- Support 16 WiFi users simultaneously.
- Support IE (7.0 and later), Firefox (3.0 and later), Opera (10.0 and later), Chrome (10.0 and later).
- Support Windows XP/Vista/7, MAC, Linux.

## 2.1 NFF Test

### Context

| NFF Flow Chart | Items | Steps and Requirements | Test Object |
|---|---|---|---|
|  | (1) Basic require-ments | 1. Check whether the accessories in sales package are complete.<br>2. The warranty label is not torn or removed.<br>3. Make sure the modem has no physical damage.<br>4. The modem should be still under warranty. | / |
| | (2) Fault replay | 1. Check whether the LEDs in the front cover are bright.<br>2. Test the reported faults and make sure that the faults do not replay. | Power adapter, UISM card, ethernet cable |
| | (3) Inter-net con-nection test | Connect the modem to computer and make internet connection setting (refer to User Manual for details). Open IE browser and check whether you can log on to web site (for the modems with internet connection function only). | Power adapter, UISM card, ethernet cable and computer |
| | Conclu-sion | Test the modem from step (1) to (3). Stop test if you find faults at one step. And the modem is faulty.<br>If there is no fault after you finish test, the modem is an NFF modem.<br>Note: refer to User Manual for the items that the above three steps can not test. | |

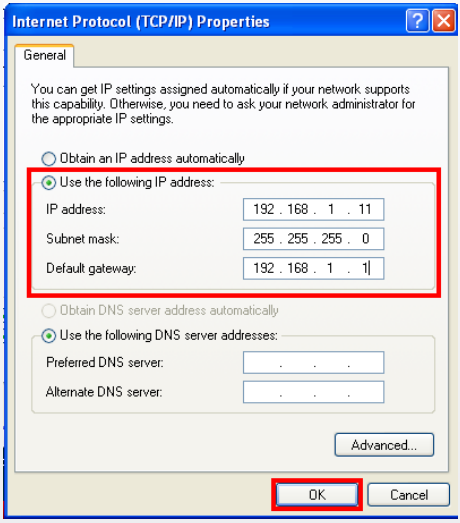
# 2.2 Web UI Test

## 2.2.1 Login

### Context

NOTE **Note:**

- The modem should be able to be powered on. Otherwise you can not do the function test.
- Insert valid USIM card before function test.
- Connect the modem with power adapter before function test.
- Set your computer's IP address, subnet mask and default gateway before function test.

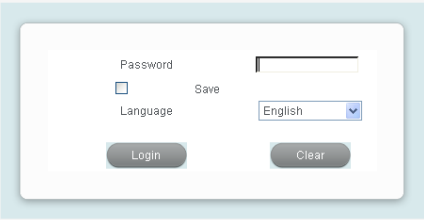

Internet Protocol (TCP/IP) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address:
192 . 168 . 1 . 11
Subnet mask:
255 . 255 . 255 . 0
Default gateway:
192 . 168 . 1 . 1
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Advanced...
OK
Cancel

- Insert the USIM card provided by local service provider into the modem, otherwise some functions of the modem are unusable.
- We use the USIM card of China mobile operator to do the test, for reference only.

### Steps

1. Insert power adapter into modem, and switch on modem.
2. Connect modem and computer with ethernet cable.

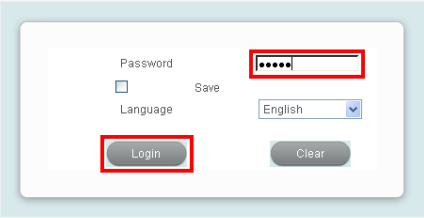
3. Open IE and input **http://192.168.1.1** in address field, then click **Enter**. The following interface will appear.



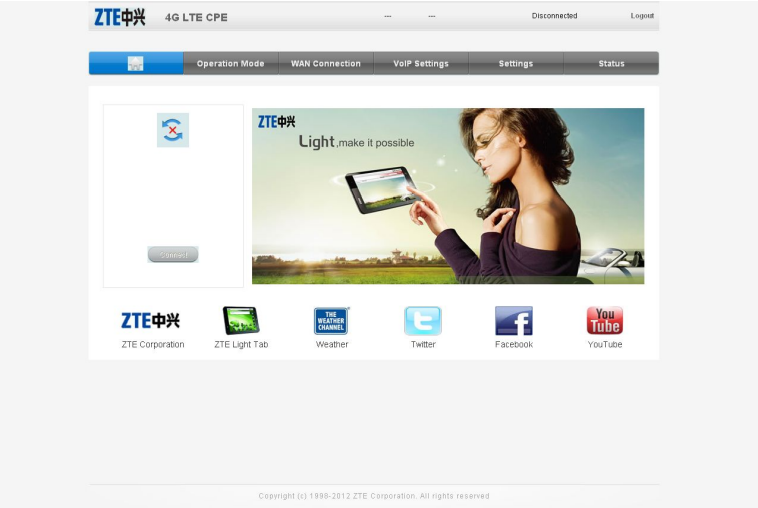

4. Input password, and click **Login** to login.

NOTE **Note:**

The default password is **admin**.




5. After you login successfully, the main page is as follows.




**--End of steps.--**

## 2.2.2 Connect Internet

### Steps

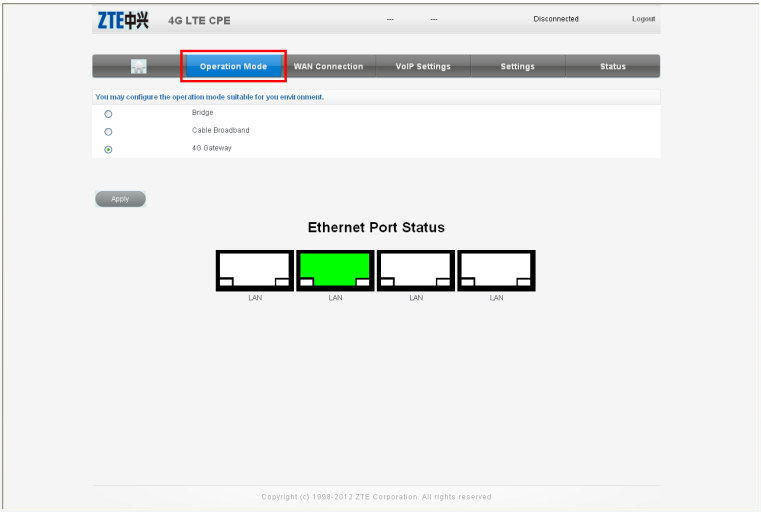
1. If the modem odes not connect the Internet automatically, click **Connect** to connect Internet.

**--End of steps.--**

## 2.2.3 Operation Mode

### Steps

1. Click **Operation Mode** to enter operation mode setting interface. You can set operation mode about the modem.

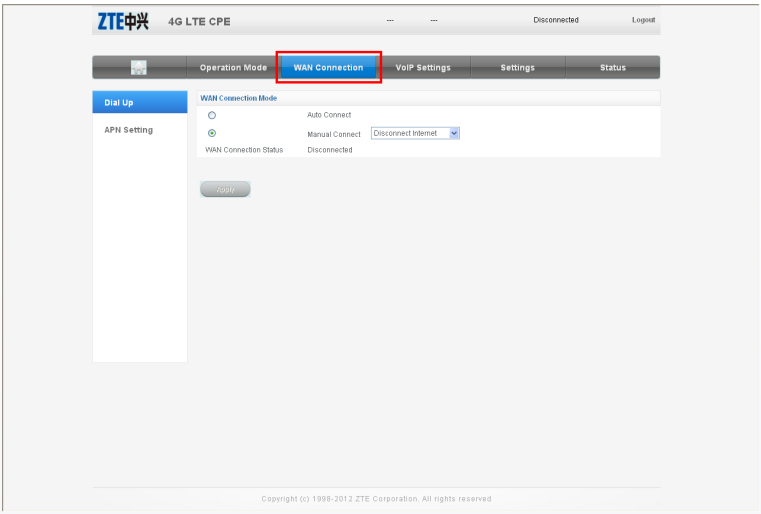



**--End of steps.--**

## 2.2.4 WAN Connection

### Steps

1. Click **WAN Connection** to enter WAN connection interface. You can set the WAN connection mode and APN about the modem.

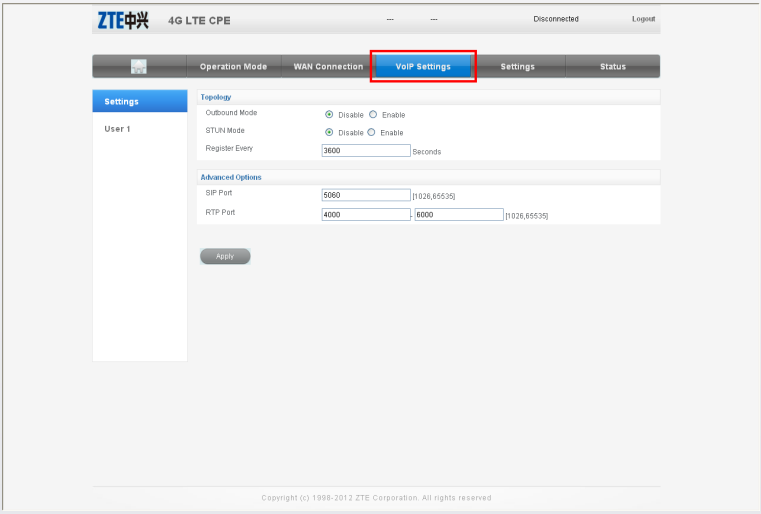



**--End of steps.--**

## 2.2.5 VoIP Settings

### Steps

1. Click **VoIP Settings** to VoIP settings interface. You can set VoIP phone about the modem.

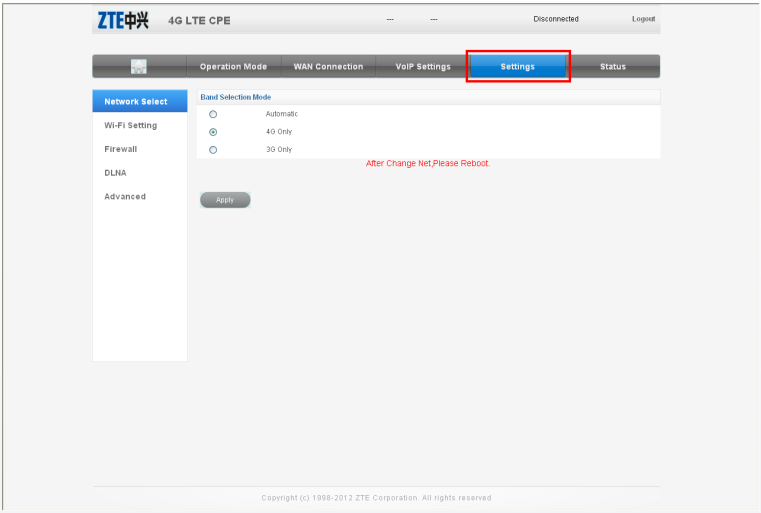



**--End of steps.--**

## 2.2.6 Settings

### Steps

1. Click **Settings** to enter settings interface. You can make settings about the modem.

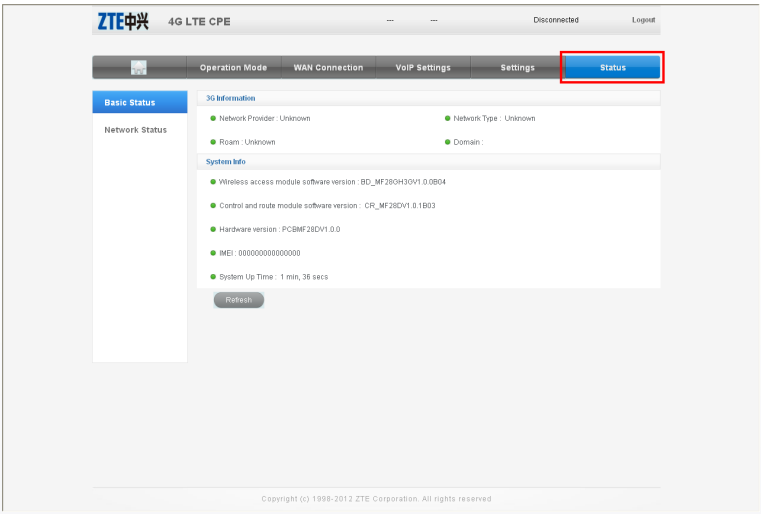



**--End of steps.--**

## 2.2.7 Status

### Steps

1. Click **Status** to enter modem status interface. You can check basic status and network status about the modem.


ZTE中兴
4G LTE CPE
---
---
Disconnected
Logout
Operation Mode
WAN Connection
VoIP Settings
Settings
Status
Basic Status
Network Status
3G Information
Network Provider : Unknown
Network Type : Unknown
Roam : Unknown
Domain :
System Info
Wireless access module software version : BD_MF28GH3OV1.0.0B04
Control and route module software version : CR_MF28DV1.0.1B03
Hardware version : PCBMF28DV1.0.0
IMEI : 000000000000000
System Up Time : 1 min, 36 secs
Refresh
Copyright (c) 1998-2012 ZTE Corporation. All rights reserved

**--End of steps.--**

# 3.1 Before You Begin

## 3.1.1 Computer and System Requirements

- Computer processor: Pentium 500 MHz or higher
- RAM: 128 MB or more
- Disk space: 50 MB or more
- Supported operating system: Windows 2000/ XP, Vista

## 3.1.2 Data Cable

- Download with ethernet cable (Material code: 052621200047)

## 3.1.3 Service Software

| Type | Name | Description |
|---|---|---|
| Download platform | **SalesDL_MF29TV1.00.00** | The platform version is for reference only. Use the latest version to do software download. |
| Software version | **00000B0000ZTE_DC_MF28GV1.0.0** | The software version is for reference only. Use the latest version to do software download. |

## 3.1.4 Cautions

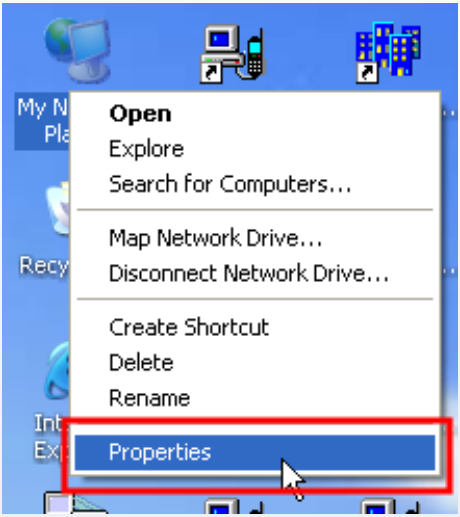
- Be sure to update the software version of each faulty adapter to the latest one.
- Make sure that the adapter can be switched on normally before downloading software. Otherwise it may fail to do software download.
- Set your computer's IP address, subnet mask and default gateway before downloading.

- The software version and download platform software in the document are for reference only. Use the latest version to do software download.
- Do not interrupt download process. Such interruption may cause switching on failure.
- The download process lasts about 6 minutes.

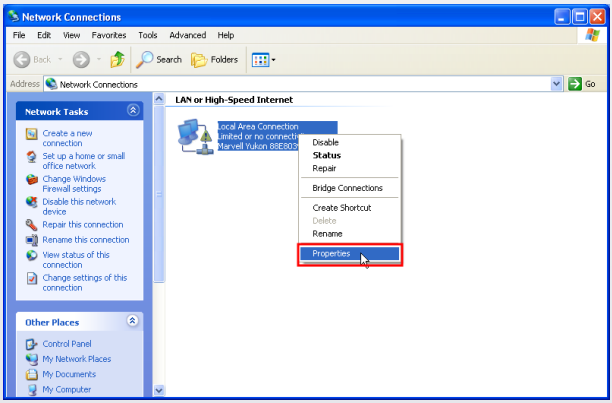
## 3.2 Set IP Address

### Steps

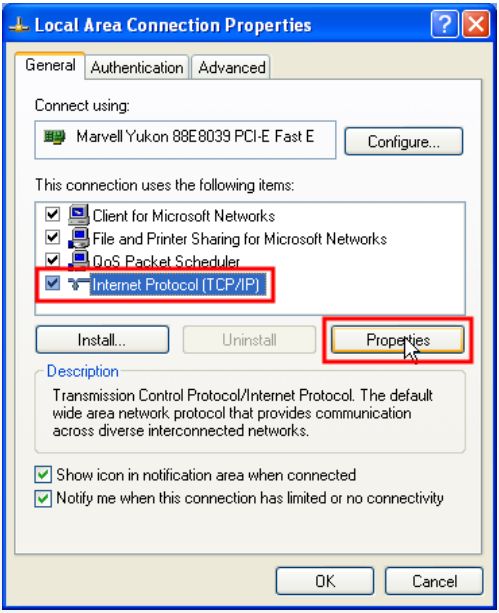
1. Right click **My Network Places** icon and select **Properties**.




2. Right-click **Local Area Connection** icon and select **Properties**.



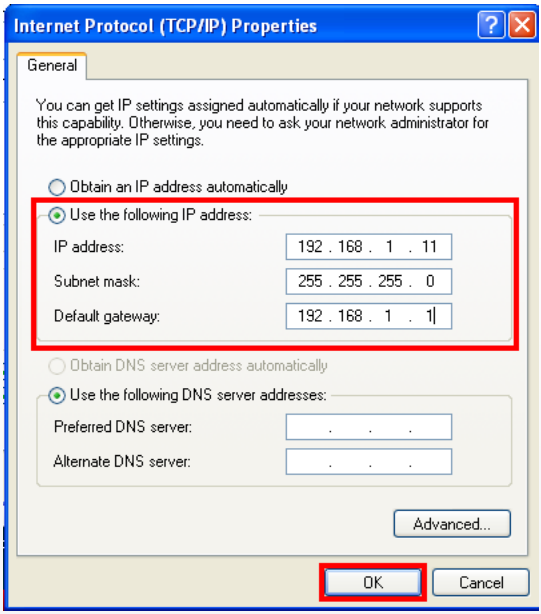
3. Select **Internet Protocol (TCP/IP)** and click **Properties**.



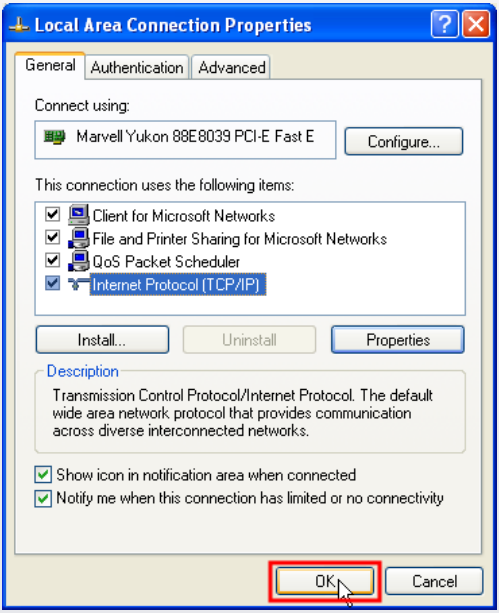

4. Set the IP address and subnet mask, click **OK**.

NOTE **Note:**

The IP address should be in 192.168.1.2~192.168.1.255 .


Internet Protocol (TCP/IP) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address: 192 . 168 . 1 . 11
Subnet mask: 255 . 255 . 255 . 0
Default gateway: 192 . 168 . 1 . 1
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Advanced...
OK
Cancel

5. Click **OK** to save settings and quit.

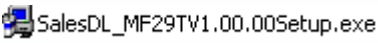



**--End of steps.--**

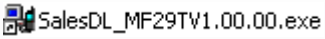
# 3.3 Install Download Platform

## Steps

1. Double-click the download platform software icon to install.




2. The shortcut icon will appear on system desktop after installation.




**--End of steps.--**

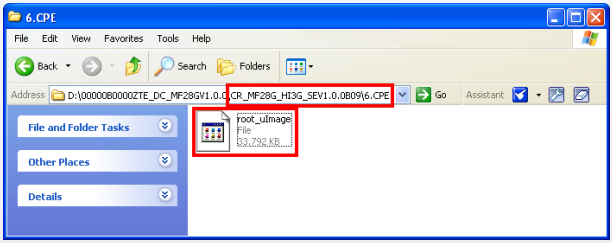
# 3.4 Download Software

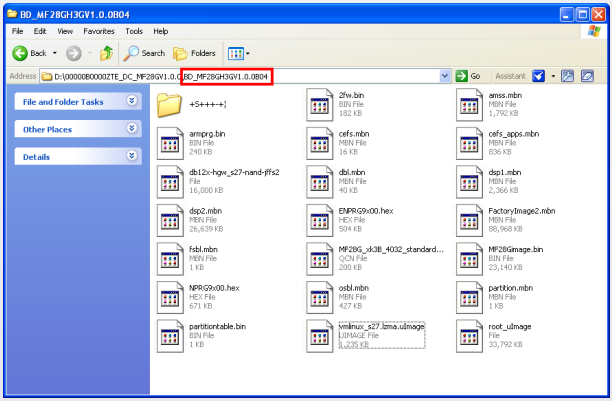
## Prerequisite

- Do not interrupt download process. Such interruption may cause switching on failure.

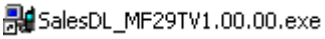
## Steps

1. Copy the file **root_uImage** in file folder [**CR_MF28G_HI3G_SEV1.0.0B09®6.CPE**] to the software file folder **BD_MF28GH3GV1.0.0B04**.

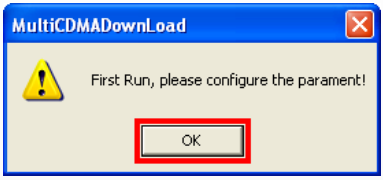


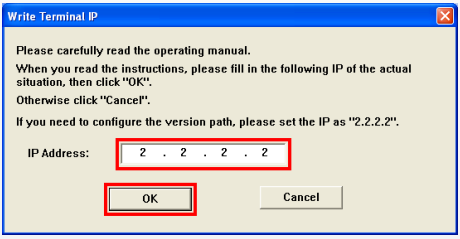
2. Insert power adapter into modem, and switch on modem.
3. Connect modem and computer with ethernet cable.
4. Double-click the shortcut icon.



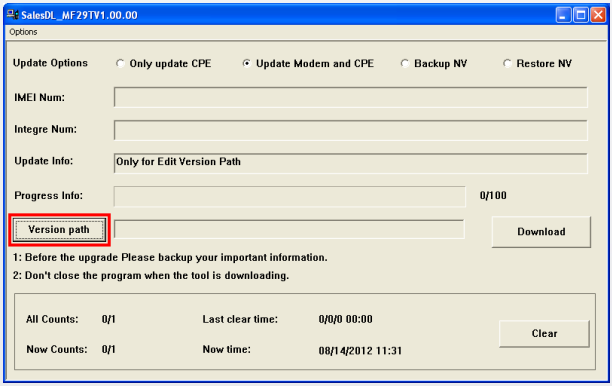

5. Click **OK**.



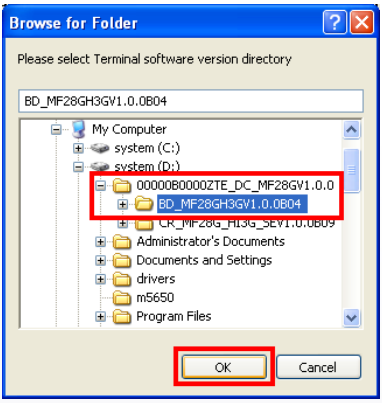

6. Set the IP as **2.2.2.2**.


Write Terminal IP
Please carefully read the operating manual.
When you read the instructions, please fill in the following IP of the actual situation, then click "OK".
Otherwise click "Cancel".
If you need to configure the version path, please set the IP as "2.2.2.2".
IP Address:
2 . 2 . 2 . 2
OK
Cancel

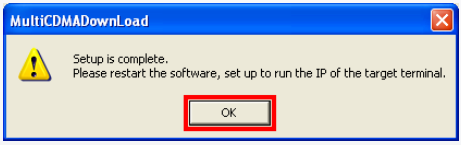
7. The main interface is as follows. Click **Version path** to select software version file.



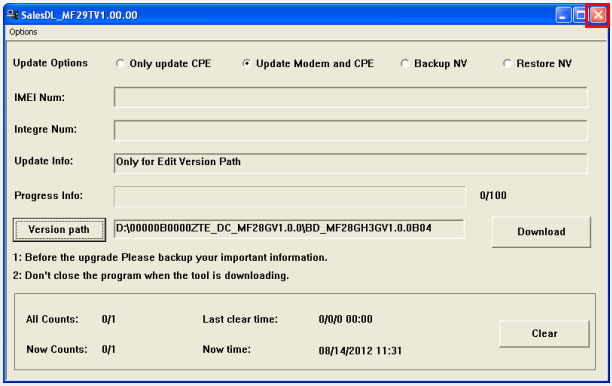

8. Select the correct file and click **OK**.



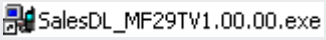

9. Click **OK**.



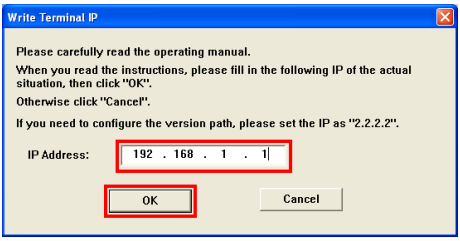

10. Click  to close download platform.



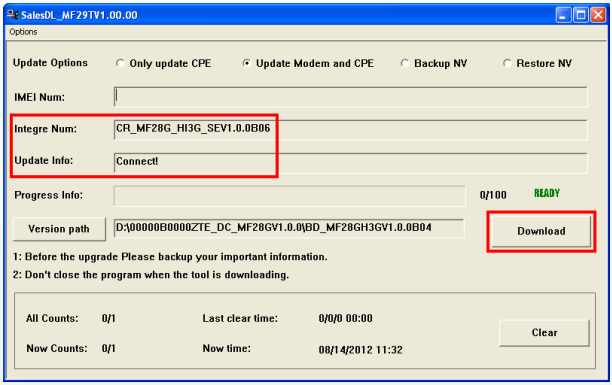

11. Double-click the shortcut icon.



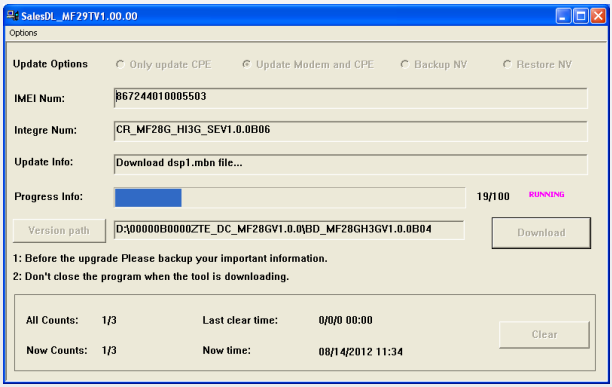

12. Set the IP as **192.168.1.1**.


Write Terminal IP
Please carefully read the operating manual.
When you read the instructions, please fill in the following IP of the actual situation, then click "OK".
Otherwise click "Cancel".
If you need to configure the version path, please set the IP as "2.2.2.2".
IP Address:
192 . 168 . 1 . 1
OK
Cancel

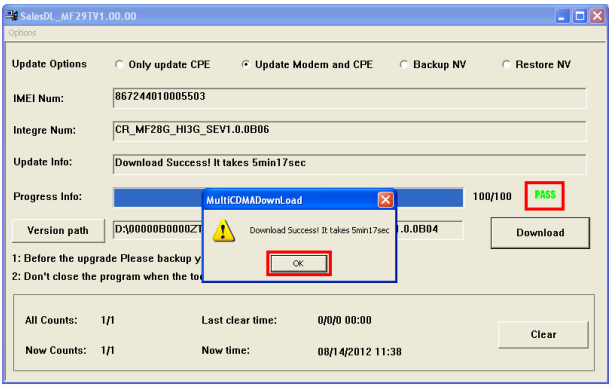
13. The interface is as follows. When the update information displays **Connect**, click **Download** to start the download process.



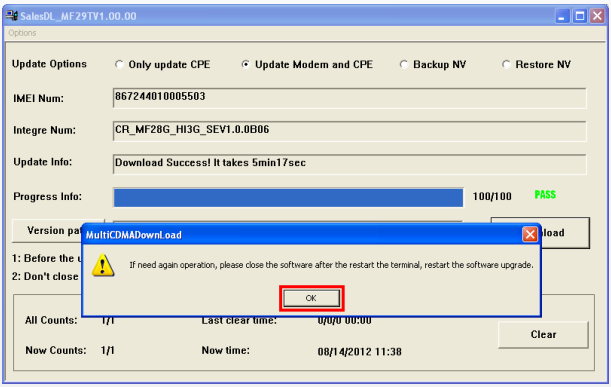

14. Downloading software.




15. Download successfully, click **OK**.




16. Click **OK**.




**--End of steps.--**

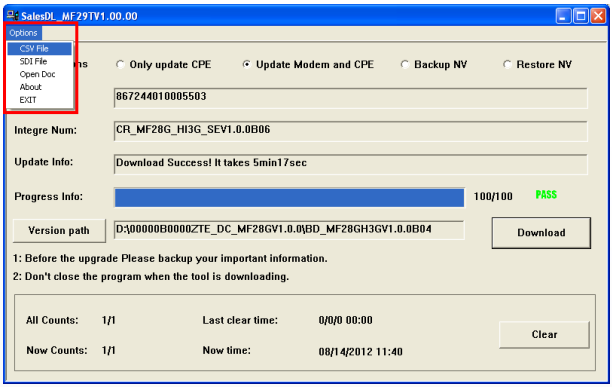
# 3.5 Export Download Information File

## Prerequisite

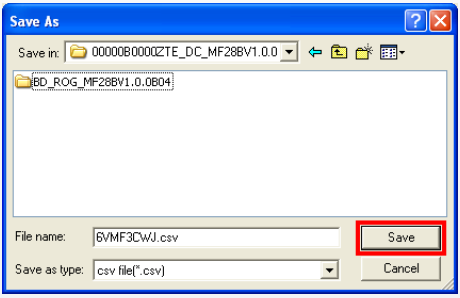
- You can export download information file after successful software download.
- All download information will be deleted after you export SDI file. Therefore, we strongly recommend that you export CSV file before SDI file.

## Steps

1. Click [**Options® CSV File**] to export CSV file.

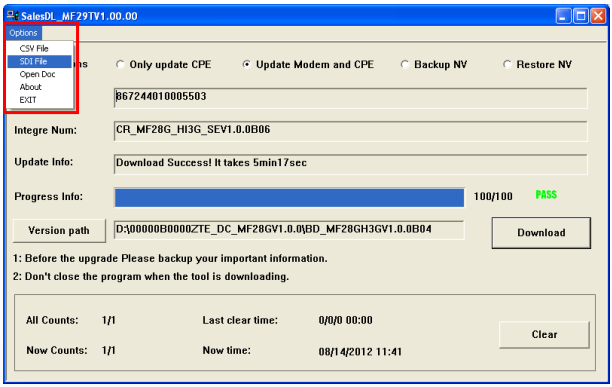



2. Select the saving directory and click **Save**.

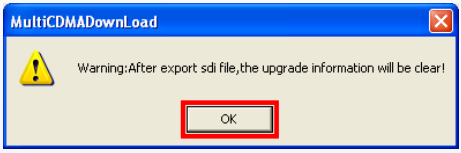



3. Save successfully, click **OK**.

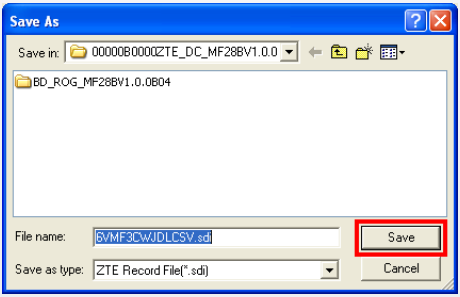
4. Click [**Options® SDI File**] to export SDI file.




5. Read the warning and click **Yes**.




6. Select the saving directory and click **Save**.

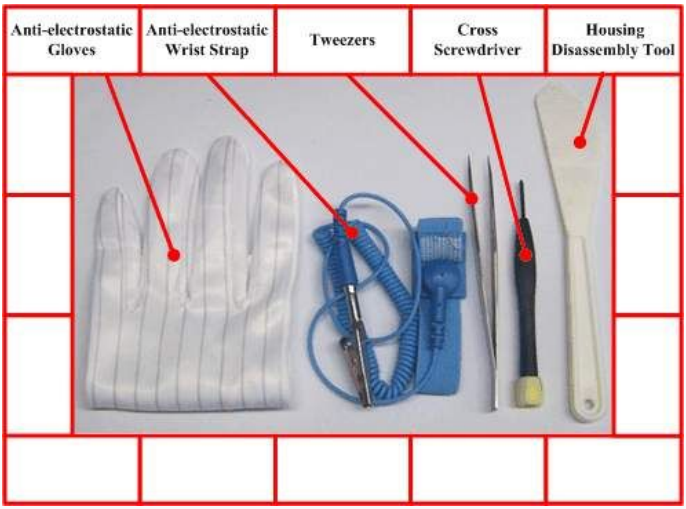



7. Save successfully, click **OK**.

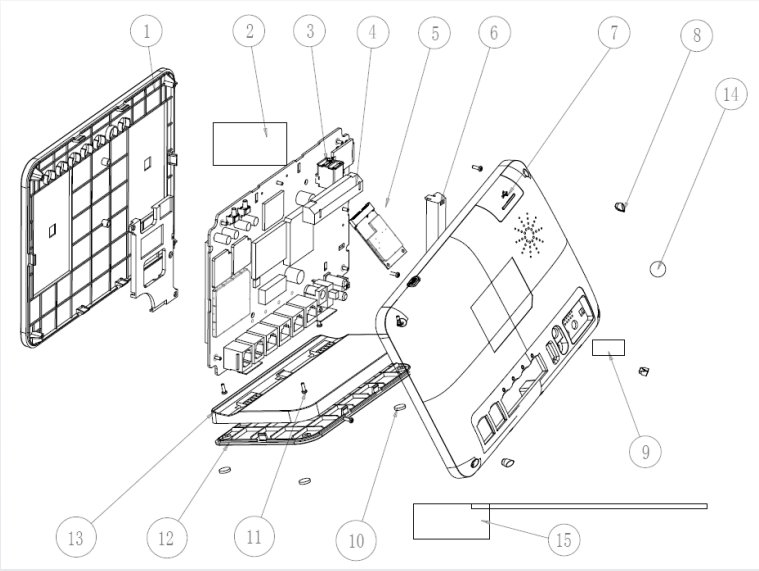
**--End of steps.--**

# 4 Disassembly

## 4.1 Disassembly Tools

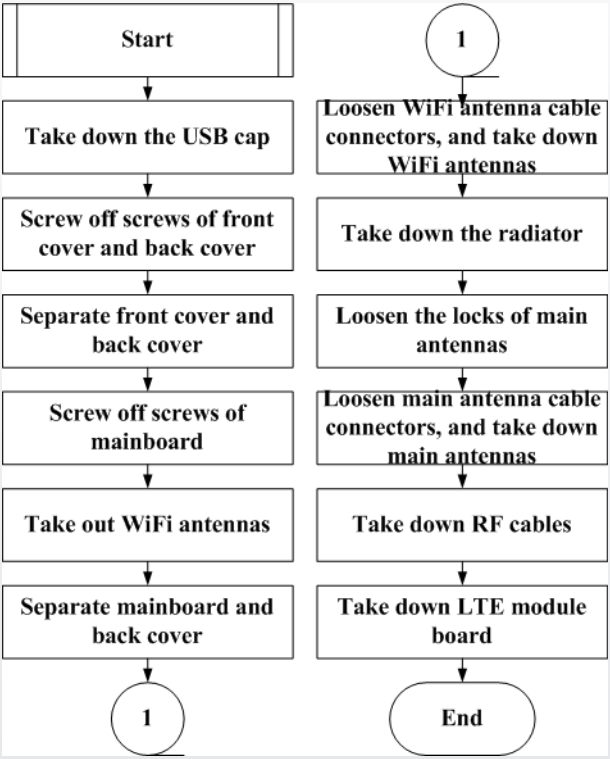



## 4.2 Exploded View



| NO. | Name | NO. | Name |
|---|---|---|---|
| 1 | Front Cover | 9 | Anti-disassembly Label |
| 2 | Radiator | 10 | Foot Mat |
| 3 | Mainboard | 11 | Screw |
| 4 | Main Antenna | 12 | Base Bottom Cover |
| 5 | LET Module Board | 13 | Base Upper Cover |
| 6 | Sub-antenna | 14 | Anti-counterfeit Label |
| 7 | Back Cover | 15 | WiFi Antenna |
| 8 | Screw Plug | 16 | |

## 4.3 Disassembly Flow Chart


Start
Take down the USB cap
Screw off screws of front cover and back cover
Separate front cover and back cover
Screw off screws of mainboard
Take out WiFi antennas
Separate mainboard and back cover
1
1
Loosen WiFi antenna cable connectors, and take down WiFi antennas
Take down the radiator
Loosen the locks of main antennas
Loosen main antenna cable connectors, and take down main antennas
Take down RF cables
Take down LTE module board
End

# 4.4 Disassembly Steps

## Context

NOTE **Note:**

The modem logo vary from country to country. We use this modem as an example in this document, the pictures are for reference only.

## Steps

1. The product overview is as follows.

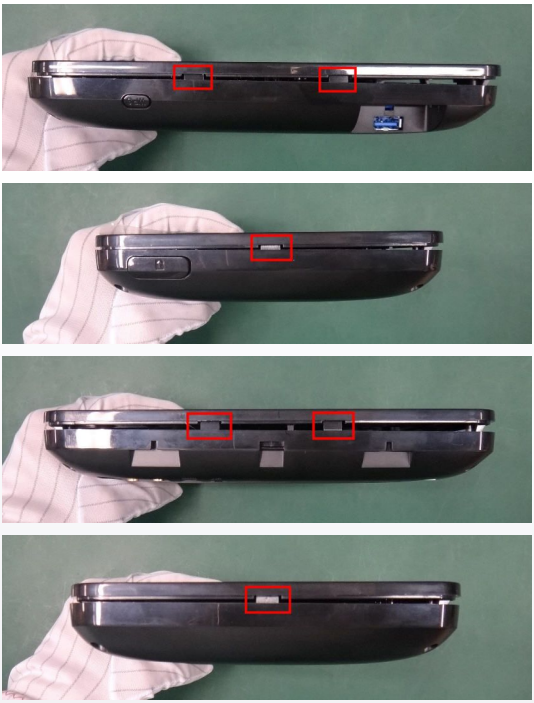
2. Take down the USB cap.

3. The disassembled USB cap is as follows.

4. Screw off the four screws with screwdriver.

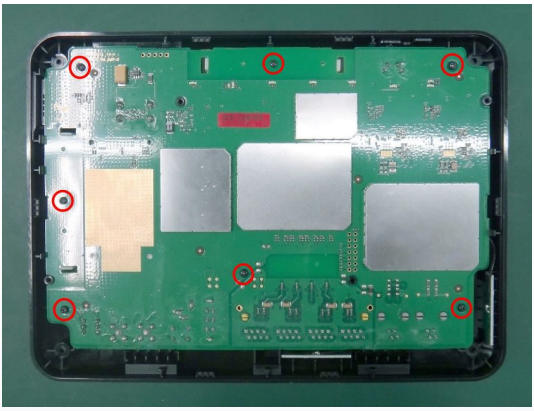
5. Separate the front cover and back cover with disassemble housing tool.

6. Pay attention to the locks between front cover and back cover when assembling.

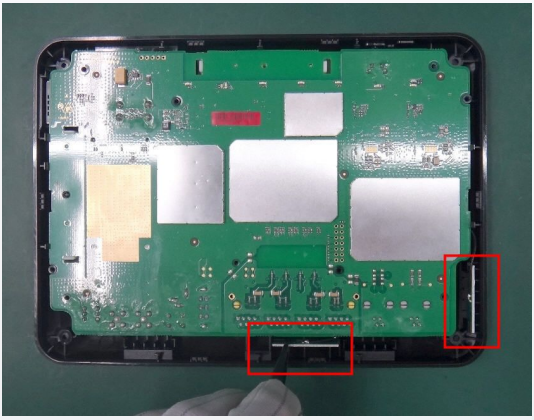


7. The separated front cover and back cover are as follows.

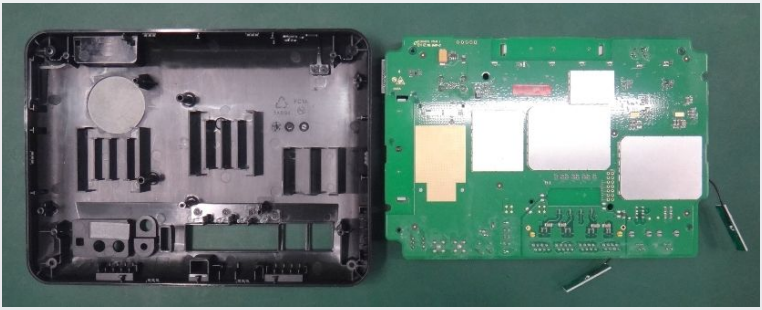
8. Screw off the seven screws with screwdriver.



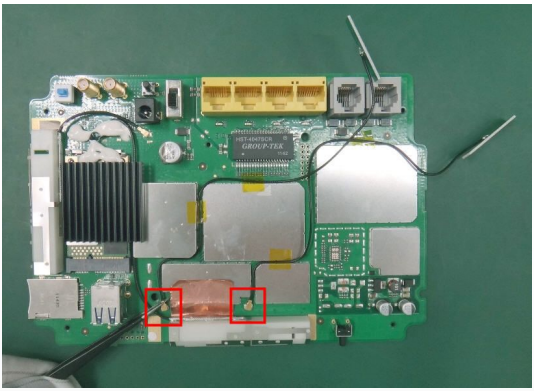
9. Take out the WiFi antennas with tweezers.



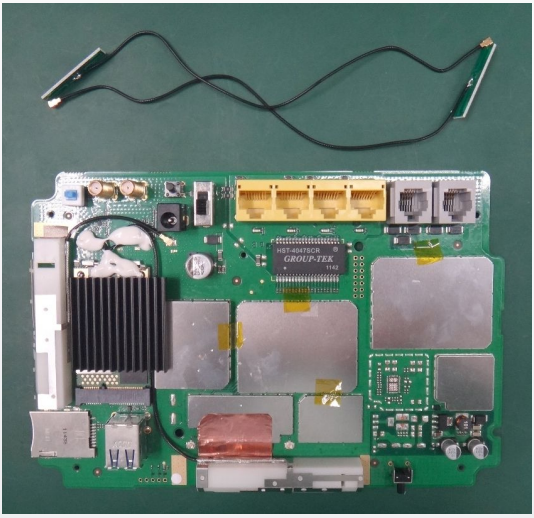
10. Separate mainboard and back cover.



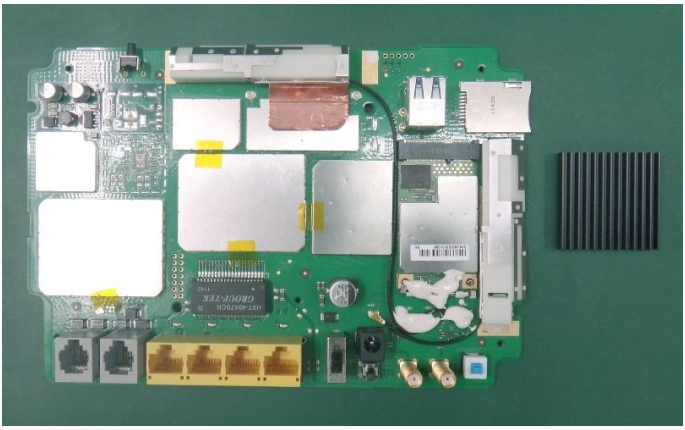
11. Loosen the WiFi antenna cable connectors, and take down WiFi antennas.



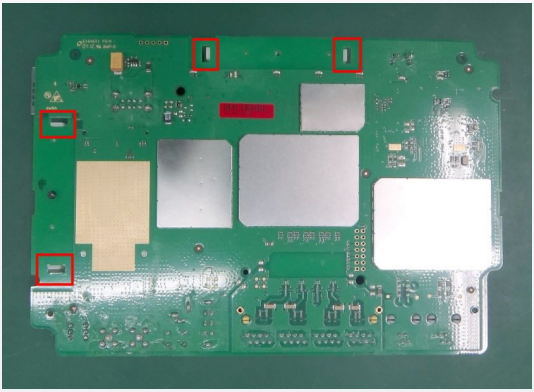
12. The disassembled WiFi antennas are as follows.



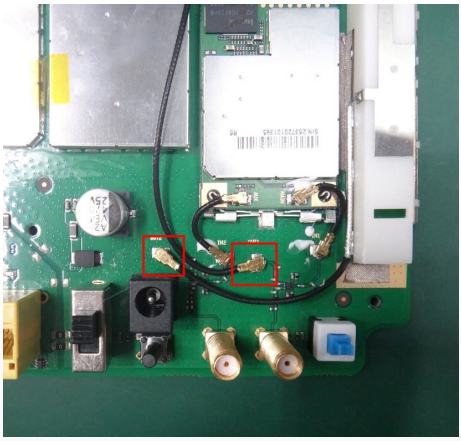
13. Take down the radiator.



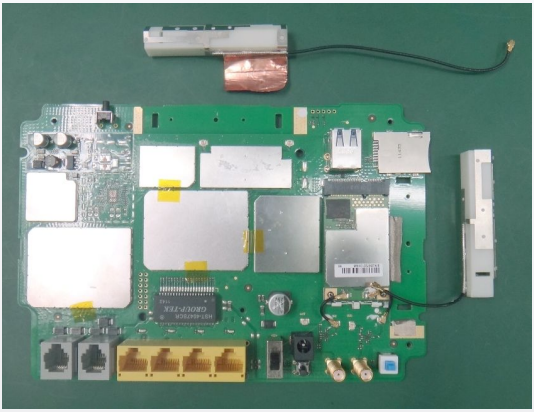
14. Loosen the locks of main antennas.



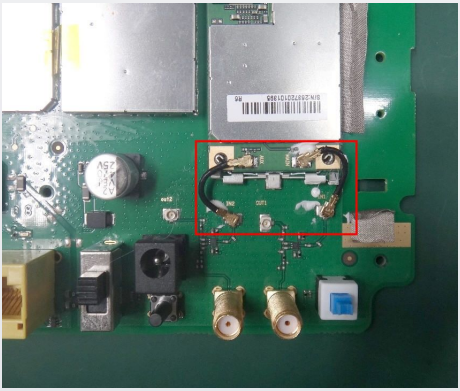
15. Loosen the main antenna cable connectors.



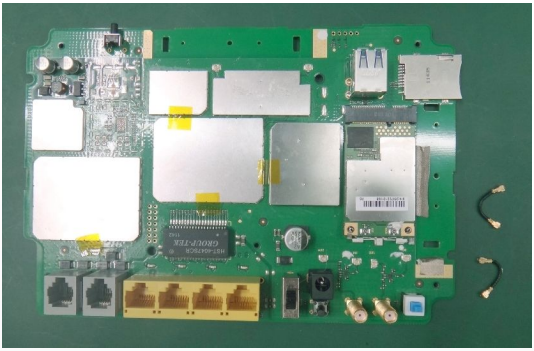
16. Take down main antennas.



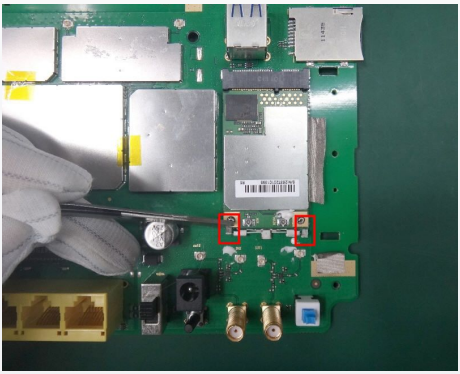
17. Loosen the RF cable connectors.



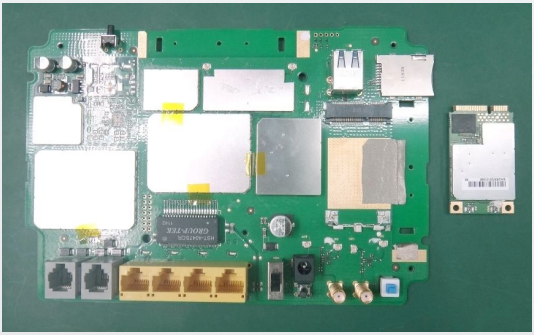
18. The disassembled RF cables are as follows.



19. Loosen the locks of LTE module board.

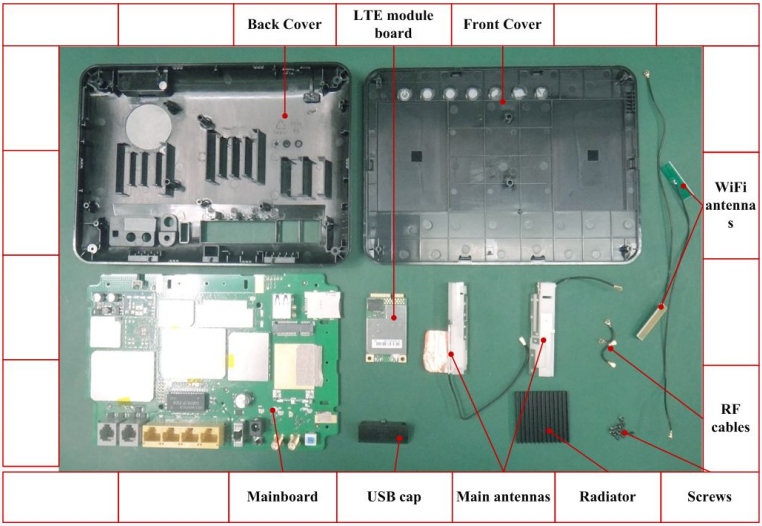


20. Take down the LTE module board.

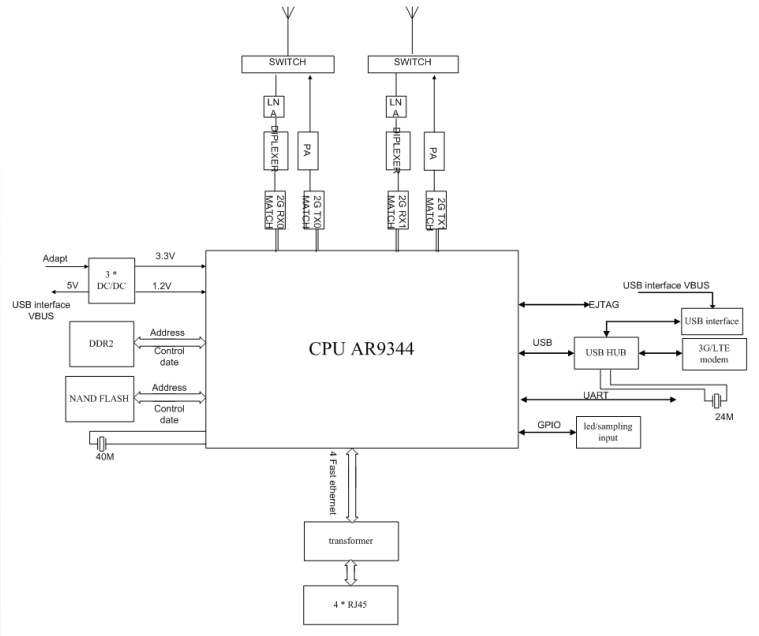


**--End of steps.--**

## 4.5 Composing



## 5.1 Principle Block Diagram



# 5.2 Basic Component Distribution

Figure 1 Mainboard Top Overview

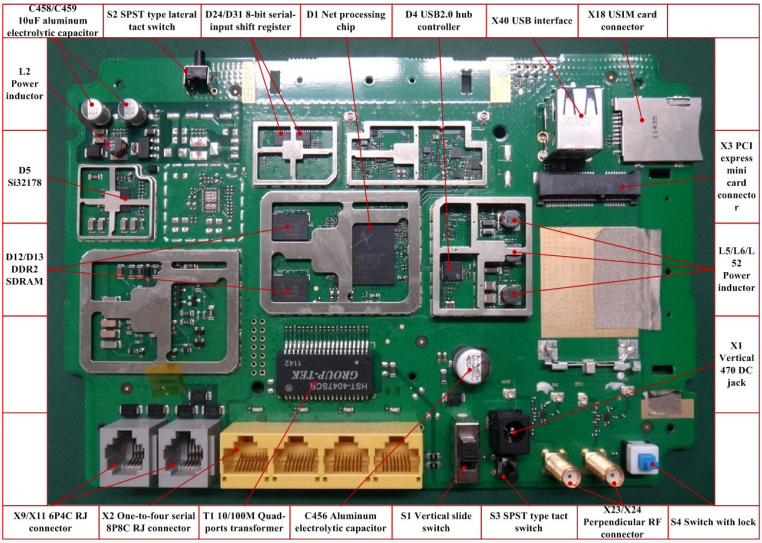
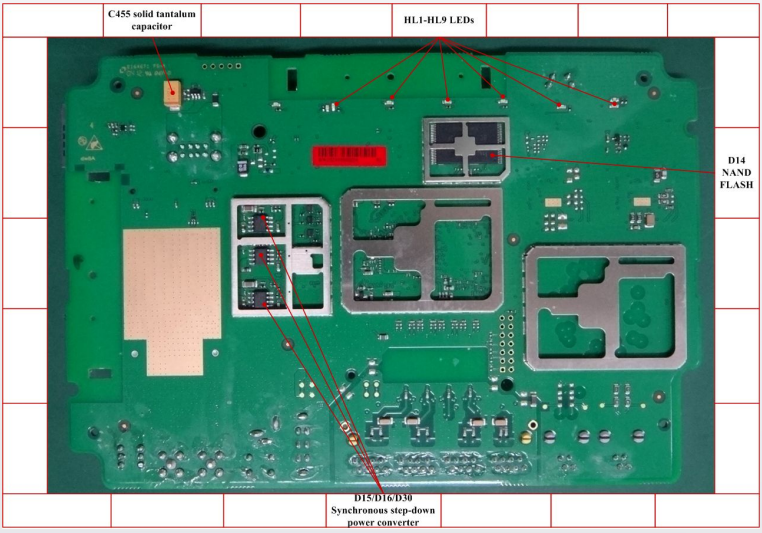

C458/C459 10uF aluminum electrolytic capacitor
S2 SPST type lateral tact switch
D24/D31 8-bit serial-input shift register
D1 Net processing chip
D4 USB2.0 hub controller
X40 USB interface
X18 USIM card connector
L2 Power inductor
D5 Si32178
D12/D13 DDR2 SDRAM
X3 PCI express mini card connector
L5/L6/L52 Power inductor
X1 Vertical 470 DC jack
X9/X11 6P4C RJ connector
X2 One-to-four serial 8P8C RJ connector
T1 10/100M Quad-ports transformer
C456 Aluminum electrolytic capacitor
S1 Vertical slide switch
S3 SPST type tact switch
X23/X24 Perpendicular RF connector
S4 Switch with lock

Figure 2 Mainboard Bottom Overview



## 5.3 PCB Layout

Figure 3 Mainboard PCB Top View

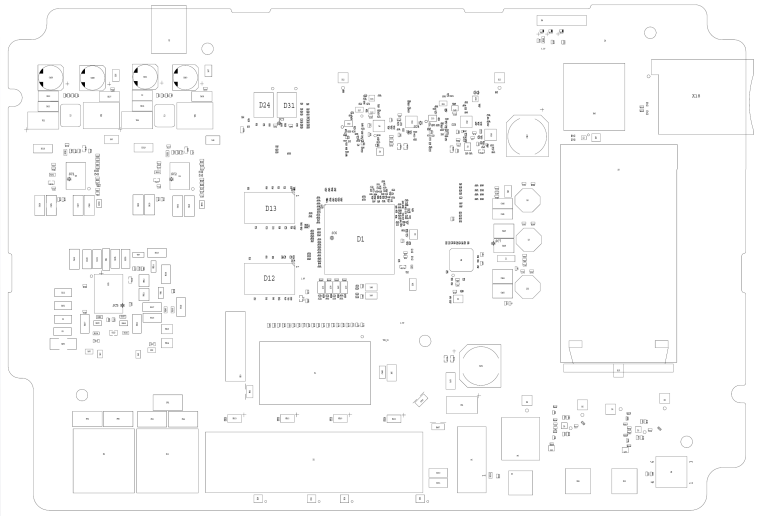
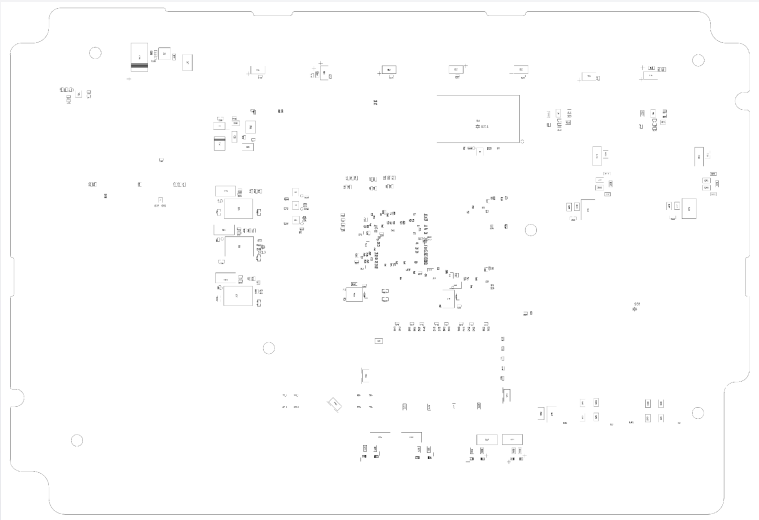


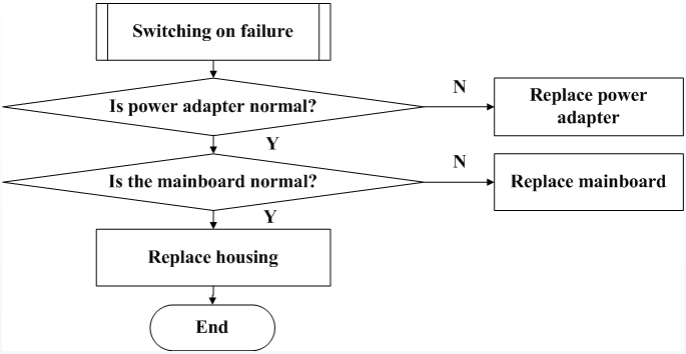
Figure 4 Mainboard PCB Bottom View



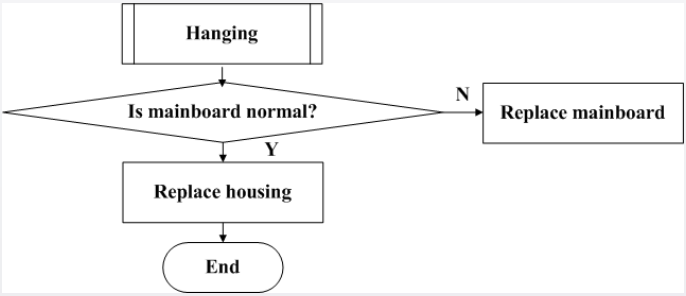
## 6.1 Housing Failure

For the housing failure, make the corresponding replacement according to 4.4 Disassembly Steps.

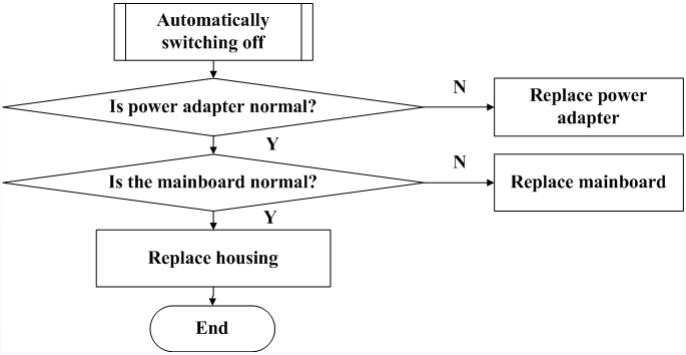
## 6.2 Switching On Failure



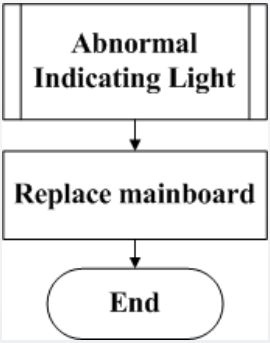

## 6.3 Hanging



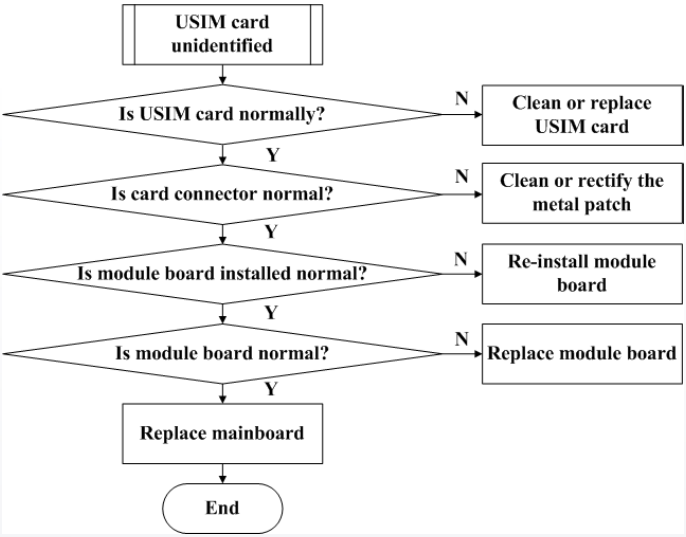
## 6.4 Automatically Switching Off



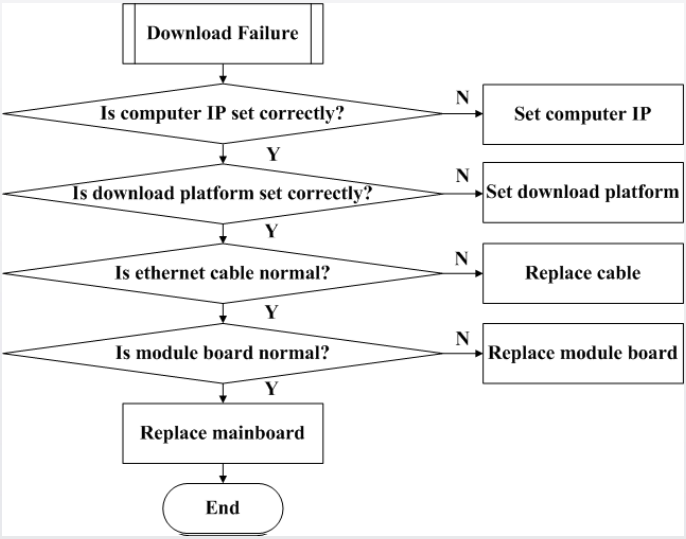

## 6.5 Abnormal Indicating Light



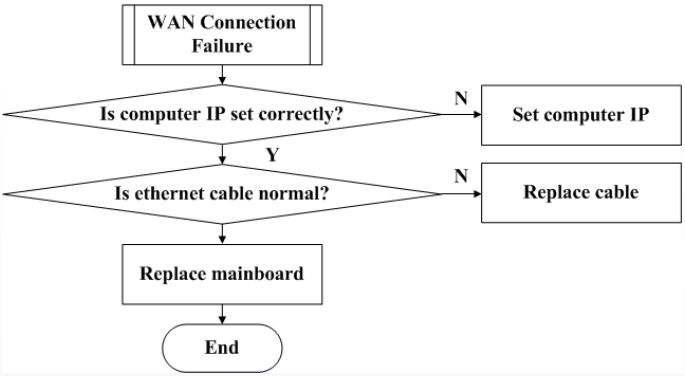
## 6.6 USIM Card Unidentified



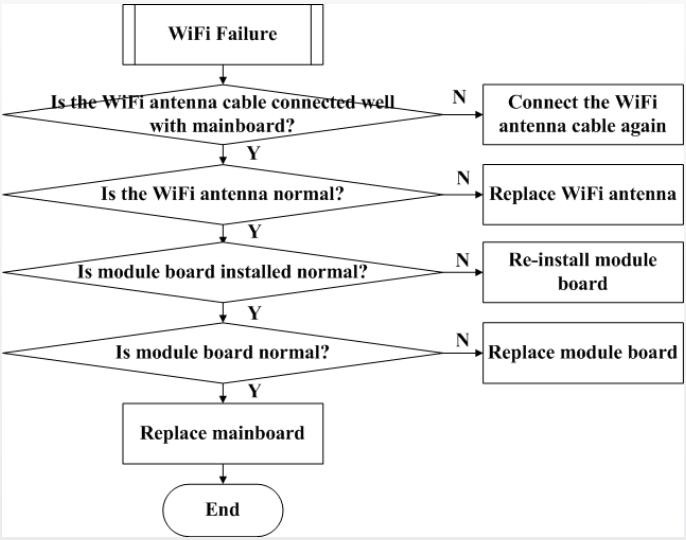

## 6.7 Download Failure



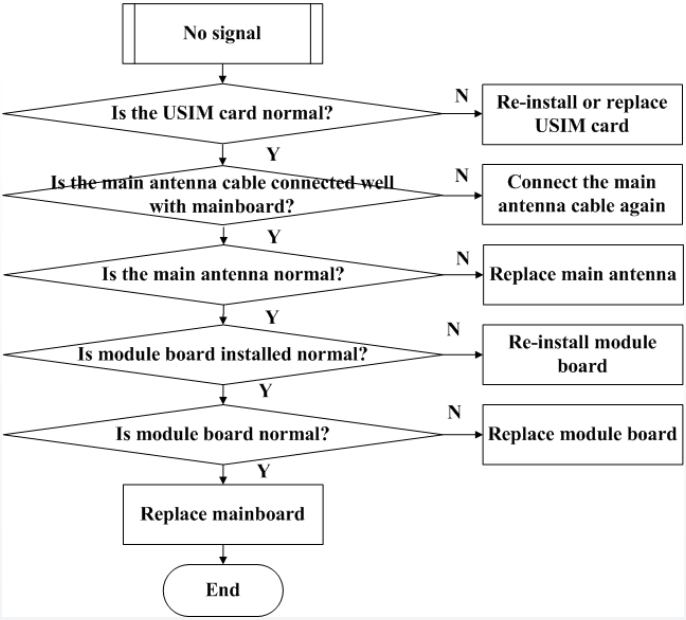
## 6.8 WAN Connection Failure




## 6.9 Wi-Fi Failure



## 6.10 No Signal



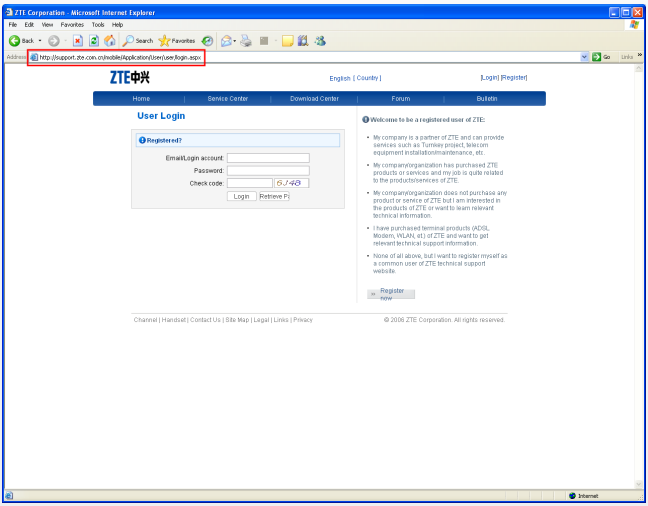
# 7.1 After-Sales Technical Support Website

## Prerequisite

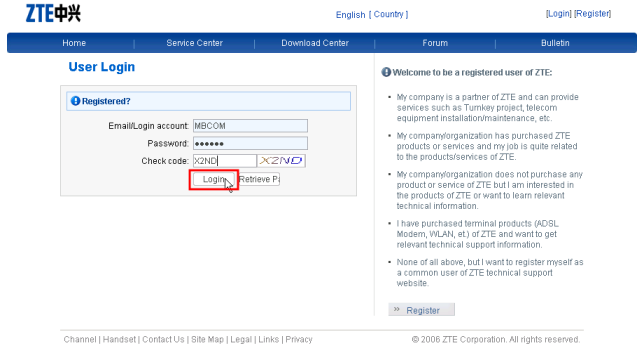
- If you have any questions about ZTE handset repair, you can ask for help through the technical forum. Our technical support engineers will give you a reply within 24 hours.
- For technical documents such as the training document and repair manual, you can download from this website too.
- If you have any suggestion, please provide your suggestion to us through the technical forum. This will help us to better meet your needs.
- Home page: **http://support.zte.com.cn/mobile**.

## Steps

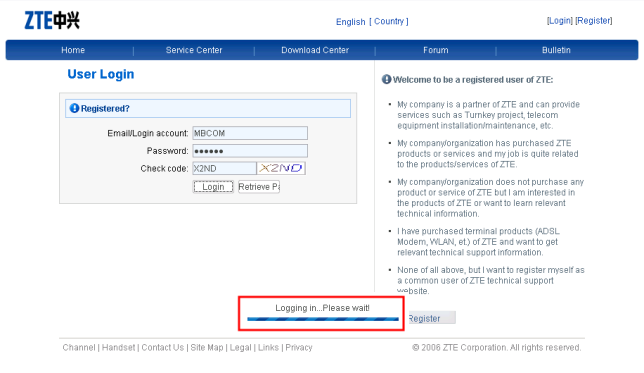
1. Input **http://support.zte.com.cn/mobile** in the address bar and press **Enter**.



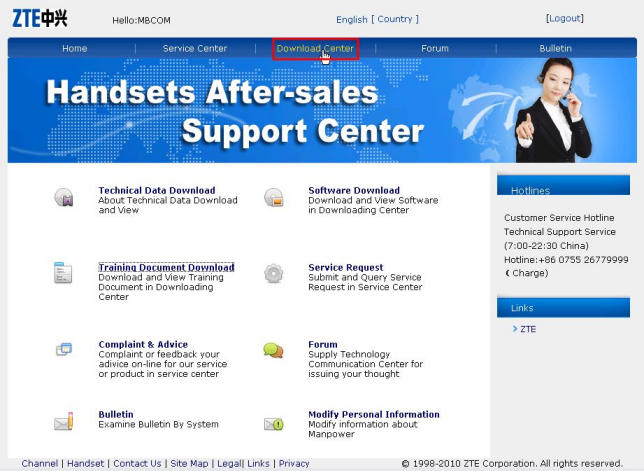

2. Input **Email/Login account**, **Password** and **Check code**, and click **Login**.



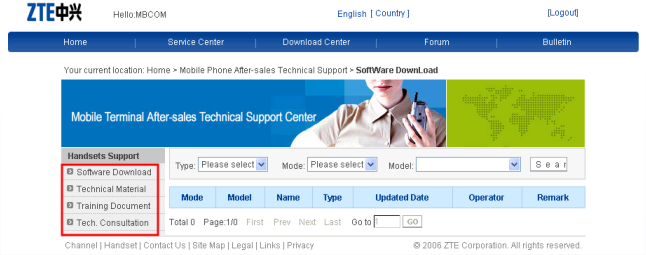

3. The login progress is displayed. Please wait.




4. In the main window of the handsets after-sales support center, click **Download Center**.



5. Click the items to get the corresponding software, technical material and training document.




**--End of steps.--**

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E-mail: tech.sp@zte.com.cn